IN THE SPECIFICATION:

Please amend the specification as follows:

Please amend paragraph number **[0025]** as follows:

[0025] Still referring to drawing FIGS. 2A through 2C, a portion of a semiconductor device 10 is shown having a bond pad 12 thereon with the copper layer 12′ located thereon having the upper surface thereof located at approximately the same level as the active surface 14 of substrate 11 of the semiconductor device 10, the active surface 14 having a layer of insulation 13 (typically a passivation layer of an insulating oxide or insulating nitride) thereon. As illustrated in drawing FIG. 2B, the copper layer 12′ of bond pad 12 has a suitable metal layer 12″ selectively plated thereon using well-known plating processes, the function of the metal layer 12″ being to provide a good metal to which an effective wire bond may be formed using well-known wire bonding apparatus.

Please amend paragraph number **[0028]** as follows:

[0028] Referring to drawing FIG. 2E, a portion of a semiconductor device 10 is shown having a bond pad 12 thereon with the copper layer 12′ located thereon having the upper surface thereof located at approximately the same level as the active surface 14 of substrate 11 of the semiconductor device 10, the active surface 14 having a layer of insulation 13 (typically a passivation layer of an insulating oxide or insulating nitride) thereon. As illustrated in drawing FIG. 2E, the copper layer 12′ of bond pad 12 has a barrier layer 12‴ formed of a suitable material having a suitable metal layer 12″ selectively plated thereon using well-known plating processes. The function of the barrier layer 12‴ is to help prevent interaction between the copper layer 12′ and the suitable metal layer 12″ of the bond pad 12 and/or to help prevent or decrease the growth of intermetallics between the copper layer 12′ and the metal layer 12″. For instance, barrier materials, such as titanium, tungsten, tantalum, nickel, tantalum-nickel alloys, titanium-nickel alloys, titanium-tungsten alloys, etc. are frequently used in conjunction with aluminum alloy interconnects. In other instances, a barrier layer of nickel between copper and tin will decrease the growth of tin-copper intermetallics. The layers of metal forming the bond pads 12 also

occasionally are silicided, or have a refractory interconnect material, such as molybdenum, tungsten, or tungsten silicide, as part thereof. The function of the metal layer 12″ is to provide a good metal to which an effective wire bond may be formed using well-known wire bonding apparatus, such as a metal layer 12″ of gold when gold wire 20 is being used for wire bonding.

Please amend paragraph number **[0033]** as follows:

[0033] Referring to drawing FIGS. 4A through 4D, in drawing FIG. 4A, a portion of a semiconductor device 10 is shown having a bond pad 12 thereon with the copper layer 12′ located thereon having the upper surface thereof located at approximately the same level as the active surface 14 of substrate 11 of the semiconductor device 10, the active surface 14 having a layer of insulation 13 (typically a passivation layer of an insulating oxide or insulating nitride) thereon. Also illustrated in drawing FIG. 4A, the copper layer 12′ of bond pad 12 has a suitable metal layer 12″ selectively plated thereon using well-known plating processes. The function of the metal layer 12″ is to provide a good metal to which an effective wire bond may be formed using well-known wire bonding apparatus.

Please amend paragraph number **[0035]** as follows:

[0035] Referring to drawing FIG. 4C, a portion of a semiconductor device 10 is shown having a bond pad 12 thereon having a copper layer 12′ located thereon having a portion bonded thereto of a conductive lead 23 located on a portion of a substrate 24 of a portion of a TAB tape 21. The active surface 14 of substrate 11 of the semiconductor device 10 has a layer of insulation (typically a passivation layer of an insulating oxide or insulating nitride) 13 thereon. Also illustrated in drawing FIG. 4C, the function of the metal layer 12″ is to provide a good metal to which an effective bond may be formed using well known bonding apparatus to the conductive lead 23 of the TAB tape 21. The conductive lead 23 of the TAB tape may be of any suitable metal, such as copper, copper alloys, etc. The metal layer 12″ may be of any suitable metal, such as described herein.

Please amend paragraph number **[0036]** as follows:

[0036] Referring to drawing FIG. 4D, a portion of a semiconductor device 10 is shown having a bond pad 12 thereon having a copper layer 12′ located thereon having a barrier layer 12‴ located thereon having, in turn, a metal layer 12″ located thereon. The metal layer 12″ of the bond pad 12 is bonded to a portion of a conductive lead 23 located on a portion of a substrate 24 of a portion of a TAB tape 21. The conductive lead 23 of the portion of the TAB tape 21 ~~including~~ includes a layer 26 of suitable metal located thereon for the bonding of the conductive lead 23 to the metal layer 12″ of the bond pad 12 of the semiconductor device 10. The active surface 14 of substrate 11 of the semiconductor device 10 has a layer of insulation (typically a passivation layer of an insulating oxide or insulating nitride) 13 thereon. Also illustrated in drawing FIG. 4D, the function of the metal layer 12″ is to provide a good metal to which an effective bond may be formed using well known bonding apparatus to the metal layer 26 of the conductive lead 23 of the TAB tape 21. The substrate 24 and metal layer 26 may be of any suitable metal for bonding purposes, such as gold, alloys of gold, etc. The conductive lead 23 of the TAB tape may be of any suitable metal, such as copper, copper alloys, etc. The metal layer 12″ may be of any suitable metal, such as described herein. The barrier layer 12‴ may be of any suitable metal or material, such as described herein.

Please amend paragraph number **[0038]** as follows:

[0038] Referring to drawing FIG. 5A, a process 100 for the formation of a bond pad 12 including a copper layer 12′ and a layer of metal 12″ thereon for wire bonding purposes as described hereinbefore is illustrated. As illustrated in step 102, a substrate 11 as described hereinbefore for a semiconductor device 10 has a layer of copper or copper alloy 12′ deposited thereon using any desired deposition process. Subsequently, in step 104, a layer of metal 12″ is deposited on the copper layer 12′ using any well-known deposition process. Then, in step 106, the copper layer 12′ and layer of metal 12″ is patterned and etched to form the desired shape, number, and pattern for the bond pads 12 on the active surface 14 of the substrate 11 of the semiconductor device 10. A layer of insulation 13 is typically applied to the active surface 14 of the substrate 11 to protect the circuitry formed thereon of the semiconductor device 10. After the

completion of the semiconductor device 10 having bond pads 12 including a copper layer 12′ and layer of metal 12″ thereon, the semiconductor ~~device~~ device 10 may be assembled to a lead frame (not shown) for wire bonding a wire 20 to the bond pad 12 of the semiconductor device 10 using any suitable wire bonding process 108 and apparatus.

Please amend paragraph number **[0039]** as follows:

[0039] Referring to drawing FIG. 5B, a process 200 for the formation of a bond pad 12 including a copper layer 12′ and a layer of metal 12″ thereon for wire bonding purposes as described hereinbefore is illustrated. As illustrated in step 202, a substrate 11 as described hereinbefore for a semiconductor device 10 has a layer of copper or copper alloy 12′ deposited thereon using any desired deposition process. Subsequently, in step 204, the copper layer 12′ is patterned and etched to form the desired shape, number, and pattern for the bond pads 12 on the active surface 14 of the substrate 11 of the semiconductor device 10. Then, in step 206, the layer of metal 12″ is deposited on the copper layer 12′ using any desired deposition process, as described hereinbefore, such as electrodeposition, electroless deposition, etc. to form the bond pad 12 having a copper layer 12′ and layer of metal 12″ thereon for good wire bonding properties. A layer of insulation 13 is typically applied to the active surface 14 of the substrate 11 to protect the circuitry formed thereon of the semiconductor device 10. After the completion of the semiconductor device 10 having bond pads 12 including a copper layer 12′ and layer of metal 12″ thereon, the semiconductor ~~device~~ device 10 may be assembled to a lead frame (not shown) for wire bonding a wire 20 to the bond pad 12 of the semiconductor device 10 using any suitable wire bonding process 208 and apparatus.

Please amend paragraph number **[0040]** as follows:

[0040] Referring to drawing FIG. 5C, a process 300 for the formation of a bond pad 12 including a copper layer 12′, a barrier layer 12‴, and a layer of metal 12″ thereon for wire bonding purposes as described hereinbefore is illustrated. As illustrated in step 302, a substrate 11 as described hereinbefore for a semiconductor device 10 has a layer of copper or copper alloy 12′ deposited thereon using any desired deposition process. Subsequently, in

step 304, a barrier layer 12''' of suitable material is deposited on the copper layer 12' using any well-known deposition process. Then, in step 306, the copper layer 12' and barrier layer 12''' are patterned and etched to form the desired shape, number, and pattern for the bond pads 12 on the active surface 14 of the substrate 11 of the semiconductor device 10. Then a metal layer 12'' is deposited in step 308 over the barrier layer 12''' and subsequently patterned in step 310. A layer of insulation 13 is typically applied to the active surface 14 of the substrate 11 to protect the circuitry formed thereon of the semiconductor device 10. After the completion of the semiconductor device 10 having bond pads 12 including a copper layer 12', barrier layer 12''', and layer of metal 12'' thereon, the semiconductor ~~device~~ device 10 may be assembled to a lead frame (not shown) for wire bonding a wire 20 to the bond pad 12 of the semiconductor device 10 using any suitable wire bonding process 312 and apparatus.

Please amend paragraph number **[0041]** as follows:

[0041] Referring to drawing FIG. 5D, a process 400 for the formation of a bond pad 12 including a copper layer 12', a barrier layer 12''', and a layer of metal 12'' thereon for wire bonding purposes as described hereinbefore is illustrated. As illustrated in step 402, a substrate 11 as described hereinbefore for a semiconductor device 10 has a layer of copper or copper alloy 12' deposited thereon using any desired deposition process. Subsequently, in step 404, a barrier layer 12''' of suitable material is deposited on the copper layer 12' using any well-known deposition process. Then, in step 406, a metal layer 12'' is deposited on the barrier layer 12'''. In step 408, the copper layer 12', barrier layer 12''', and metal layer 12'' are patterned and etched to form the desired shape, number, and pattern for the bond pads 12 on the active surface 14 of the substrate 11 of the semiconductor device 10. A layer of insulation 13 is typically applied to the active surface 14 of the substrate 11 to protect the circuitry formed thereon of the semiconductor device 10. After the completion of the semiconductor device 10 having bond pads 12 including a copper layer 12', barrier layer 12''', and layer of metal 12'' thereon, the semiconductor ~~device~~ device 10 may be assembled to a lead frame (not shown) for wire bonding a wire 20 to the bond pad 12 of the semiconductor device 10 using any suitable wire bonding process 410 and apparatus.

Please amend paragraph number **[0042]** as follows:

[0042] Referring to drawing FIG. 5E, a process 500 for the formation of a bond pad 12 including a copper layer 12′ and a layer of metal 12″ thereon for wire bonding purposes as described hereinbefore is illustrated. As illustrated in step 502, a substrate 11 as described hereinbefore for a semiconductor device 10 has a layer of copper or copper alloy 12′ deposited thereon using any desired deposition process. Subsequently, in step 504, at least two barrier layers 12‴ are deposited on the copper ~~layer.~~ layer 12′. In step 506, a metal layer 12″ is deposited on the barrier layer 12‴ using any desired deposition process, as described hereinbefore, such as electrodeposition, electroless deposition, etc. In step 508, the copper layer 12′, barrier layer 12‴, and metal layer 12″ are patterned to form the bond pad 12 having a copper layer 12′, barrier layer 12‴, and layer of metal 12″ thereon for good wire bonding properties. A layer of insulation 13 is typically applied to the active surface 14 of the substrate 11 to protect the circuitry formed thereon of the semiconductor device 10. After the completion of the semiconductor device 10 having bond pads 12 including a copper layer 12′, at least two barrier layers 12‴, and layer of metal 12″ thereon, the semiconductor ~~device~~ device 10 may be assembled to a lead frame (not shown) for wire bonding a wire 20 to the bond pad 12 of the semiconductor device 10 using any suitable wire bonding process 510 and apparatus.

Please amend paragraph number **[0044]** as follows:

[0044] Referring to drawing FIG. 5F, a process 600 for the formation of a bond pad 12 including a copper layer 12′ and a layer of metal 12″ thereon for conductor lead 23 of TAB tape 21 bonding purposes as described hereinbefore is illustrated. As illustrated in step 602, a substrate 11 as described hereinbefore for a semiconductor device 10 has a layer of copper or copper alloy 12′ deposited thereon using any desired deposition process. Subsequently, in step 604, a layer of metal 12″ is deposited on the copper layer 12′ using any well-known deposition process. Then, in step 606, the copper layer 12′ and layer of metal 12″ are patterned and etched to form the desired shape, number, and pattern for the bond pads 12 on the active surface 14 of the substrate 11 of the semiconductor device 10. A layer of insulation 13 is typically applied to the active surface 14 of the substrate 11 to protect the circuitry formed

thereon of the semiconductor device 10. After the completion of the semiconductor device 10 having bond pads 12 including a copper layer 12′ and layer of metal 12″ thereon, the semiconductor ~~device~~ device 10 may be assembled to a conductor lead 23 of a TAB tape 21 for bonding a conductor lead 23 to the bond pad 12 of the semiconductor device 10 using any suitable bonding process 608 and apparatus.

Please amend paragraph number **[0045]** as follows:

[0045] Referring to drawing FIG. 5G, a process 700 for the formation of a bond pad 12 including a copper layer 12′ and a layer of metal 12″ thereon for conductor lead 23 of TAB tape 21 bonding purposes as described hereinbefore is illustrated. As illustrated in step 702, a substrate 11 as described hereinbefore for a semiconductor device 10 has a layer of copper or copper alloy 12′ deposited thereon using any desired deposition process. Subsequently, in step 704, the copper layer 12′ is patterned and etched to form the desired shape, number, and pattern for the bond pads 12 on the active surface 14 of the substrate 11 of the semiconductor device 10. Then, in step 706, the layer of metal 12″ is deposited on the copper layer 12′ using any desired deposition process, as described hereinbefore, such as electrodeposition, electroless deposition, etc. to form the bond pad 12 having a copper layer 12′ and layer of metal 12″ thereon for good wire bonding properties. A layer of insulation 13 is typically applied to the active surface 14 of the substrate 11 to protect the circuitry formed thereon of the semiconductor device 10. After the completion of the semiconductor device 10 having bond pads 12 including a copper layer 12′ and layer of metal 12″ thereon, the semiconductor ~~device~~ device 10 may be assembled to a conductor lead 23 of a TAB tape 21 for wire bonding a conductor lead 23 to the bond pad 12 of the semiconductor device 10 using any suitable bonding process 708 and apparatus.

Please amend paragraph number **[0046]** as follows:

[0046] Referring to drawing FIG. 5H, a process 800 for the formation of a bond pad 12 including a copper layer 12′, a barrier layer 12‴, and a layer of metal 12″ thereon for conductor lead 23 of TAB tape 21 bonding purposes as described hereinbefore is illustrated. As illustrated

in step 802, a substrate 11 as described hereinbefore for a semiconductor device 10 has a layer of copper or copper alloy 12′ deposited thereon using any desired deposition process. Subsequently, in step 804, a barrier layer 12‴ of suitable material is deposited on the copper layer 12′ using any well-known deposition process. Then, in step 806, the copper layer 12′ and barrier layer 12‴ are patterned and etched to form the desired shape, number, and pattern for the bond pads 12 on the active surface 14 of the substrate 11 of the semiconductor device 10. Then a metal layer 12″ is deposited in step 808 over the barrier layer 12‴ and subsequently patterned in step 810. A layer of insulation 13 is typically applied to the active surface 14 of the substrate 11 to protect the circuitry formed thereon of the semiconductor device 10. After the completion of the semiconductor device 10 having bond pads 12 including a copper layer 12′, barrier layer 12‴, and layer of metal 12″ thereon, the semiconductor ~~device~~ device 10 may be assembled to a conductor lead 23 of a TAB tape 21 for bonding a conductor lead 23 to the bond pad 12 of the semiconductor device 10 using any suitable bonding process 812 and apparatus.

Please amend paragraph number **[0047]** as follows:

[0047] Referring to drawing FIG. 5I, a process 900 for the formation of a bond pad 12 including a copper layer 12′, a barrier layer 12‴, and a layer of metal 12″ thereon for conductor lead 23 of TAB tape 21 bonding purposes as described hereinbefore is illustrated. As illustrated in step 902, a substrate 11 as described hereinbefore for a semiconductor device 10 has a layer of copper or copper alloy 12′ deposited thereon using any desired deposition process. Subsequently, in step 904, a barrier layer 12‴ of suitable material is deposited on the copper layer 12′ using any well-known deposition process. Then, in step 906, a metal layer 12″ is deposited on the barrier layer 12‴. In step 908, the copper layer 12′, barrier layer 12‴, and metal layer 12″ are patterned and etched to form the desired shape, number, and pattern for the bond pads 12 on the active surface 14 of the substrate 11 of the semiconductor device 10. A layer of insulation 13 is typically applied to the active surface 14 of the substrate 11 to protect the circuitry formed thereon of the semiconductor device 10. After the completion of the semiconductor device 10 having bond pads 12 including a copper layer 12′, barrier layer 12‴, and layer of metal 12″ thereon, the semiconductor ~~device~~ device 10 may be assembled to a conductor lead 23 of a TAB

tape 21 for bonding a conductor lead 23 to the bond pad 12 of the semiconductor device 10 using any suitable bonding process 910 and apparatus.

Please amend paragraph number **[0048]** as follows:

[0048] Referring to drawing FIG. 5J, a process 1000 for the formation of a bond pad 12 including a copper layer 12′ and a layer of metal 12″ thereon for conductor lead 23 of TAB tape 21 bonding purposes as described hereinbefore is illustrated. As illustrated in step 1002, a substrate 11 as described hereinbefore for a semiconductor device 10 has a layer of copper or copper alloy 12′ deposited thereon using any desired deposition process. Subsequently, in step 1004, at least two barrier layers 12‴ are deposited on the copper ~~layer.~~ layer 12′. In step 1006, a metal layer 12″ is deposited on the barrier layer 12‴ using any desired deposition process, as described hereinbefore, such as electrodeposition, electroless deposition, etc. In step 1008, the copper layer 12′, barrier layers 12‴, and metal layer 12″ are patterned to form the bond pad 12 having a copper layer 12′, barrier layers 12‴, and layer of metal 12″ thereon for good wire bonding properties. A layer of insulation 13 is typically applied to the active surface 14 of the substrate 11 to protect the circuitry formed thereon of the semiconductor device 10. After the completion of the semiconductor device 10 having bond pads 12 including a copper layer 12′, barrier layer 12‴, and layer of metal 12″ thereon, the semiconductor ~~device~~ device 10 may be assembled to a conductor lead 23 of a TAB tape 21 for wire bonding a conductor lead 23 to the bond pad 12 of the semiconductor device 10 using any suitable bonding process 1010 and apparatus.